THE FAUNAL REMAINS FROM ZOLTAN

DRAGOŞ MOISE (Bucureşti)

The faunal sample comes from Complex no.1 of Zoltan settlement (Covasna county), dated at the end of the Early Bronze Age[1]. It consists of mammal bone remains and fragments of mollusk shells.

The mollusks are represented by 21 fragments of *Unio crassus* shell and two shell fragments of terrestrial snails - *Helix pomatia* and *Caepeaea vindobonensis.*

The osteological material belonging to mammals totalizes 300 bone remains and represents domestic waste. The high degree of fragmentation (well reflected by the weight/number of remains relation - see table), associated with the post-depositional alteration of the bone remains in the soil during fossilisation, rendered the zooarchaeological analysis quite difficult, only 101 remains could be identified.

Several species of domestic mammals were identified: the horse *(Equus caballus),* the cattle *(Bos taurus),* the "ovicaprinae" - sheep / goat (*Ovis aries / Capra hircus)* and the pig *(Sus domesticus).* The presence of the dog is indirectly reflected by the gnawing traces and dental impressions present on 11,9% of the identified remains. The wild mammal species identified are: the red deer *(Cervus elaphus),* the roe deer *(Capreolus capreolus),* the wild boar *(Sus scrofa attila)* and the hare *(Lepus europaeus).* Absolute and relative frequencies of mammal species by number of remains (NR) and by minimal number of individuals (MNI) are shown in the table and figures 1 and 2.

Among unidentifiable remains, 45.73% belong to mammals of large size - namely large herbivores (horse, cattle, red deer...) and 54.27% to the medium-sized mammals (ovicaprins, roe deer, pig...). We mention that the first category of unidentifiables includes the four burned remains of the whole sample.

In the following we will present the osteological material by species, with the mention that the osteometric information is inserted in the text, because of its scarcity. (With some exceptions we have used the codes of von den Driesh[2]; all measurements in mm).

Horse. The single horse remain is a left lower third molar (M_3), of an individual aged above 3½ years old. The measurements (V. Eisenmann method[3]) yielded: occlusal length - 31.5; length of the preflexid - 8; length of the postflexid - 11.5; length of the double knot - 13.4; maximal width - 14.5. Preflexid index - 25.3; postflexid index - 36.5; double knot index - 42.5.

Cattle. The bone remains belonging to cattle are the most numerous in the sample. Their repartition by anatomical regions is: cranium: 23 remains (out of which 20 are isolated teeth; the slaughtering age was estimated on the basis of their wear[4]), rachis: 3, thorax: 1, anterior limb: 4, posterior limb: 6. It is noticeable that all the remains of the appendicular regions belong to the autopode (metapodes, phalanges...), excepting a humerus fragment. Autopodes usually represent butchery waste, deprived of any importance from the point of view of the carnate alimentation.

Only four bone pieces could be measured: M_3: B - 11; metatarsus: Bd - 61, maximal breadth at the distal fusion point - 58.5, maximal depth at the distal fusion point[5] - 31; phalanx 1 anterior: GLpe - 62, Bp - (31.5), SD - 26.5, Bd - 31.5; phalanx 2 anterior: Bp - 26, SD - 21, Bd - (22). The last piece (phalanx 2 anterior) shows smaller dimensions compared to the other cattle bone pieces. However, in absence of a large sample of measurements, we couldn`t make any specification concerning the size variability of the cattle from Zoltan.

The four individuals estimated were slaughtered at the following ages: juvenile (criterium: metatarsus, calcaneus), 1½ - 2 years, 2½ years and 9 years (criterium: dental wear). Taking into consideration the sexual maturity age, and also the period of gestation and suckling, we find that only the last two of the four individuals estimated could have been used in reproduction.

Ovicaprins. This group occupies the second place in the sample as NR and MNI, after cattle. A single bone (left radius) was identified as belonging to the species

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Capra hircus (goat)[6]. The repartition of the bone remains by anatomical regions is the following: cranium: 5 remains (out of which 4 are isolated teeth; the slaughtering age was estimated on the basis of their wear[7]), thorax: 1, anterior limb: 8, posterior limb: 11. As concerning the appendicular regions, we observed, unlike in cattle, a well-balanced representation of the stylopode (humerus, femur) and zeugopode (radius, ulna, tibia) elements.

The three individuals estimated were slaughtered at the following ages: 25-26 months, 3-4 years and 5-6 years (criterium: dental wear), which means that all of them could have been used in reproduction before.

Pig. This species is represented by 11 remains belonging to one individual, aged (dental eruption[8]) one year old, an optimal weight age.

Red deer. The 12 bone remains identified belong to a minimum of two individuals - one aged 3-4 years, the other 5-6 years (dental wear[9]). Two posterior phalanges could be measured: GLpe - 60.5; 56.2, Bp - 23.2; 21.8, SD - 19; 17, Bd - 23.5; 20.5.

Roe deer. The single remain belonging to this species is a posterior phalanx 1, showing here and there traces of an acid attack due to the pH of the soil. The osteometrical data are: GLpe - 38.5, Bp - 12.5, SD - 9, Bd - 10.5.

Wild boar. We have identified 4 bone remains from a male adult individual (criterium: lower canine). The astragalus could be partially measured: GLm - 46.2, Bd - 30.

Hare. Two bone remains of hare were discovered: a rib and a left calcaneus, belonging to an adult individual.

The reduced number of bone remains hinders any interpretation of this Zoltan sample. Further analyses of zooarchaeological material will probably allow the drawing of conclusions concerning the animal economy in this settlement.

Notes

1. For more details, see the article of Valeriu Cavruc: *The Final Stage of the Early Bronze Age in South-Eastern of Transylvania (in the light of new excavation at Zoltan)* in the present issue of Thraco - Dacica.
2. A von den Driesh, *A Guide to the Measurement of Animal Bones from Archaeological Sites,* Peabody Museum, Bull. 1, Harvard University, 1976, 136 p.
3. *New York Hipparion Conference,* vol. 1, Leiden, 1988, 71 p.
4. A. Grant, *The use of tooth wear as a guide to the age of domestic ungulates,* in: Ageing and Sexing Animal Bones from Archaeological Sites, B. Willson, C. Grigson, S. Payne (eds.), BAR British Series 109, 1982, p. 91 - 108; S. Lepetz, *L'estimation des ages,* in: *L'animal dans la société gallo-romaine de la France du Nord,* Thèse de Doctorat, inedit.
5. R. N. W. Thomas, *A statistical evaluation of criteria used in sexing cattle metapodials,* in: Archaeozoologia, vol. II/1,2, 1988, p. 83 - 92.
6. W. Prummel, H.-J. Frisch, *A Guide for the Distinction of Species, Sex and Body Sides in Bones of Sheep and Goat,* in: Journal of Archaeological Science 13, Academic Press Inc. London, 1986, p. 567 - 577.
7. S. Payne, *Kill-off patterns in sheep and goats: the mandibles from Aşvan Kale,* in: AnStud, vol. XXIII, 1973, p. 281 - 303.
8. E. Schmid, *Atlas of Animal Bones (for Prehistorians, Archaeologists and Quaternary Geologists),* Elsevier Publishing Company, Amsterdam-London-New York, 1972, 159 p.
9. K.-H. Habermehl, *Altersbestimmung bei Haustieren, Pelztieren und beim jagdbaren Wild,* Paul Parey Verlag, Berlin - Hamburg, 1961, 223 p.

Zoltan 1996: The species frequencies by number of remains (NR), minimal number of individuals (MNI) and weight of remains (W)

SPECIES	NR	%NR	MNI	%MNI	W	% W	W/NR
horse (*Equus caballus*)	1	0.99	1	7.14	10	0.92	10.00
cattle (*Bos taurus*)	37	36.63	4	28.57	620	56.93	16.76
ovicaprinae	25	24.75	3	21.43	90	8.26	3.60
pig (*Sus domesticus*)	11	10.89	1	7.14	40	3.67	3.64
Bos / Cervus	8	7.92			50	4.59	6.25
red deer (*Cervus elaphus*)	12	11.88	2	14.29	230	21.12	19.17
roe deer (*Capreolus capreolus*)	1	0.99	1	7.14	5	0.46	5.00
wild boar (*Sus scrofa attila*)	4	3.96	1	7.14	40	3.67	10.00
hare (*Lepus europaeus*)	2	1.98	1	7.14	4	0.37	2.00
Total identified	**101**	**100**	**14**	**100**	**1089**	**100**	
unid. large-sized mammals	91	45.73			130	28.26	1.43
unid. medium-sized mammals	108	54.27			330	71.74	3.06
Total unidentified	**189**	**100**			**460**	**100**	
TOTAL	**300**				**1549**		

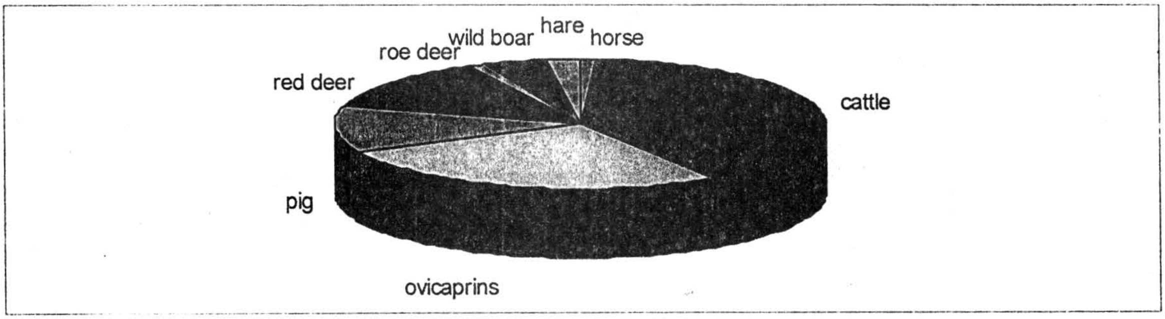


Fig. 1: Zoltan, 1996. Species frequencies by NR.

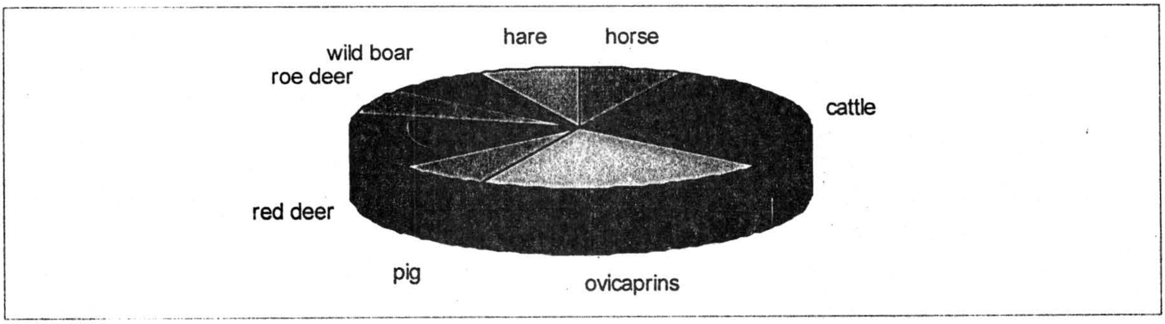


Fig. 2: Zoltan, 1996. Species frequencies by MNI.